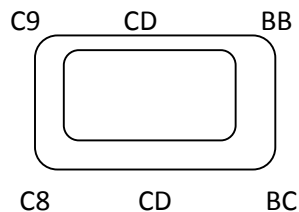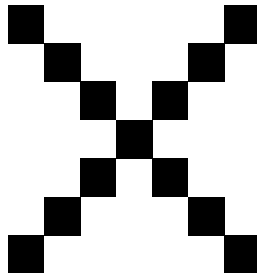C-Programming Vacation Works

1. Explain different generation of computers programming languages.
2. Classify programming language with its benefits and drawbacks.
3. What do you mean by problem solving in computer? Discuss with example, how you solve the problem using computer.
4. Why do we divide into phases for problem solving by computer? What are these steps? Discuss.
5. What do you mean by problem analysis? Explain the steps of problem solving from analysis to coding/compilation taking the problem is that you have to display the string which is palindrome or not.
6. Discuss the flowchart symbols used in C.
7. What are the similarities and dissimilarities between algorithm and flowcharting? Discuss.
8. Write algorithm and draw flowchart to display the numbers 100 to 500 divisible by 2, 4 & 6.
9. What do you mean by program debugging and testing?
10. What is IDE? What do you mean by compiler, assembler, linker & loader? Explain their use in problem solving.
11. What is the relation among box.c, box.obj & box.exe files? Discuss.
12. Discuss the meaning and purpose of documentation in programming wit h its type.
13. C is a middle Level language. Justify it.
14. Discuss the basic structure of C programming with example.
15. What do you mean by error in programming? Discuss the types of error Programming.
16. What do you mean by character-sets and keywords in C-Programming? Explain with example.
17. Define the terms identifier, variables, constants & data types. What is the relationship between variables, constants and data-types in C?
18. Discuss the different integer data types with its size defined in C.
19. What do you mean by format specifier in C? how do you specify to print signed/unsigned/hexadecimal integer, float/double/long-double and signed character in C.
20. Discuss the syntax format of printf() and scanf().
21. What are formatted and unformatted IO functions defined in C. define their syntax.
22. What are the different escape sequence characters used in C? How do you print graphics characters in C? Explain with example.
23. WAP to display the following pattern using graphics characters using hex code in an escape sequence. (use given HEX code to display that pattern)

24. What are the different operators used in C. Briefly discuss with example.

25. WAP to calculate area of a triangle if it's three sides a, b & c are input from keyboard.
26. WAP to calculate Euclidean distance between two three dimensional points (x1,y1,z1 & x2,z2,y2).
27. WAP to calculate roots of a quadratic equation. While coefficients are input form keyboard.
28. WAP to calculate simple and Compound interest.
29. Write a program to covert string into upper case and vice-versa.
30. WAP to check odd or even number using
    a. Modulus operator
    b. Bitwise operator
    c. Without using modulus and bitwise operator
31. Discuss bitwise, comma & sizeof operator with example.
32. What do you mean by type conversion and casting? Explain.
33. Discuss the structure of FOR loop, while loop and switch statement in C.
34. Write flow-chart for nested FOR loop & Do-While loop.
35. What is the difference between while & do-while loop, for & while loop, nested if-else & switch statement?
36. What do you mean by preprocessor directives in C? Explain c-macro programming with example in C?

37. Explain C variable scopes with example.
38. WAP to display following diagonal line using graphic character (HEX code: DB)

39. WAP to displaying following.
    22.56
    245.34
    45432.456

         22.56
        245.34
      45432.456
40. WAP to display following.
    1
    2 4

    3 9
    4 8 12 16
    5 15 25
    6 12 18 24 30 36
    7 21 35 49
41. WAP to display following

              1
           2 1
        3 2 1
     4 3 2 1

42. WAP to print following
    A
    AB
    ABC
    ABCD
    ABCDE
43. WAP to display following
    12345
    2345
    345
    45
    5

44. What is the output of the following (debug error if any):

```
#include<stdi.h>
#include<conio.h>
#define sum(a,b)    a+b
#define sub(a,b)   (a-b)
#define div(a,b) a/b
int main(void)
{ int a=4,b=2,tmp1,tmp2;
tmp1=5*sum(a,b)*div(a,b)
tmp2=div(a,b)-sub(a,b)*sum(a,b);
priontf("%d,%d", tmp1, tmp2);
getch();
return 0;
}
```

45. What do you mean by function in C? What are the broad types of function in C? Explain.

46. Differentiate between iterative and recursive function with example.

47. What is function prototype in C? Why prototyping required?

48. What do you mean by call by value and call by reference? Define function arguments. Also differentiate between macros and function in C.

49. What is an array? How do you initialize one and two dimensional array?

50. How do you pass array as function argument. Explain with example.

51. WAP to calculate the following series.
    a. Fibonacci series using recursion
    b. $Y=1+x/1!+x^2/2!+x^3/3!+\ldots\ldots+x^n/n!$
    c. $Y=1+2+3+4+5+\ldots\ldots+99$ using recursion.
    d. $Y=x^{1!} + x^{2!} + x^{3!} + x^{4!} + x^{5!} + \ldots\ldots+ x^{n!}$

52. WAP to sort 10 integers in an 1-D array.

53. WAP to multiply two 3X3 matrices and get the result into third matrix.

54. WAP to get the transpose of a 2X2 matrix.

55. WAP to get the inverse of a 2X2 matrix.

56. WAP to delete a character in a string using user defined function strdel().

57. WAP to read a sentence and delete a word if a first character of any word within the sentence is found while searching. The character is input from keyboard.

58. WAP to fold a matrix and makes it upper triangular or lower triangular (add the corresponding mirror elements of the matrix).

59. What is the relationship between array of characters and string? Explain with example.

60. WAP to sort list of five words stored in an array.